

# A TOY AND METHOD FOR PREPARING A CONFECTIONARY

## BACKGROUND OF THE INVENTION

### 1. Field of Invention

Embodiments of the present invention broadly relate to a toy and method for preparing a confectionary. More specifically, embodiments of the present invention provide for a toy and method for preparing a frozen confectionary, such as ice cream or yogurt.

### 2. Description of the Background Art

Frozen confectionary, such as ice cream or yogurt, has long been favorites as a desert. Home-made frozen confectionary, particularly home-made ice cream, is one of the favorite home-made deserts, especially for children. Home-made ice cream is prepared by placing salt and ice in a cylinder, and rotating the cylinder while in contact with a liquid mixture which when freezes produces ice cream. Such preparation, however, limits the preparation to a single flavor of ice cream, since only a single mixture comes in contact with the rotating cylinder.

What is needed and what has been invented is a toy and method for simultaneously preparing frozen confectionary (e.g., ice creams) of different flavor. What is more particularly needed and what has been invented is a toy and method for preparing and/or contacting two or more frozen- confectionary-producing mixtures with a cylinder containing salt and ice, so the frozen-confectionary-producing mixtures may solidify around

the cylinder to produce two or more frozen confectionaries with different flavors(e.g., vanilla, chocolate, etc.).

## **SUMMARY OF EMBODIMENTS OF THE INVENTION**

Embodiments of the present invention provide a toy for preparing frozen confectionaries. The toy has a base assembly and a tray removably supported by the base assembly and including a first trough and a second trough. A cylinder assembly is rotatably supported by the base assembly and includes a first cylinder rotatably positioned within the first trough and a second cylinder rotatably positioned in the second trough. The toy further has a cover assembly supported by the base assembly, and a crank assembly rotatably supported by the cover assembly and coupled to the cylinder assembly for rotating the first and second cylinders to prepare frozen confectionaries.

Embodiments of the present invention also provide a method for preparing frozen confectionaries with a toy having a first cylinder, a second cylinder, and a tray including a first trough and a second trough. The method for preparing frozen confectionaries comprises disposing salt and ice in the first and second cylinders, disposing respectively a first and second liquid confectionaries in the first and second troughs of the tray, and rotating respectively the first and second cylinders in the first and second troughs for respectively contacting the first and second liquid confectionaries and producing frozen confectionaries on the outside of the first and second cylinders.

These provisions together with the various ancillary provisions and features which will become apparent to those artisans possessing skill in the art as the following description proceeds are attained by devices, assemblies,

systems and methods of embodiments of the present invention, various embodiments thereof being shown with reference to the accompanying drawings, by way of example only, wherein:

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1A is a perspective view of the toy.

Figure 1B is another perspective view of the toy.

Figure 2A is a side elevational view of the toy.

Figure 2B is a perspective view of the toy without the cover assembly and with the crank assembly positioned as engaged to one of the cylinder gears.

Figure 2C is a front elevational view of the toy of Figure 2B illustrating the crank assembly engaged to on the cylinder gears.

Figure 3 is a vertical sectional view of the toy disclosing one of the cylinders which holds ice and salt for causing a liquid mixture to freeze and produce frozen confectionary on the outside of the cylinder.

Figure 4 is a perspective view of the toy with out the cover and crank assembly.

Figure 5 is a vertical sectional view through the toy of Figure 4 disclosing one of the cylinders which holds ice and salt for causing a liquid mixture to freeze and produce frozen confectionary on the outside of the cylinder.

Figure 6 is a segmented front elevational view of the base of the toy illustrating the tray removed from the base.

Figure 7 is a segmented perspective view of the base of the toy of Figure 6 including the removed tray.

Figure 8 is a perspective view of the base of the toy of Figure 6 but with the tray in its lodged position.

Figure 9 is a partial segmented top perspective view of the base of the toy including the tray in its lodged position but with the scraper spacedly positioned from a horizontal support member of the base.

Figure 10 is a partial segmented side perspective view of the base of the toy including the tray in its lodged position but with the scraper spacedly positioned from a horizontal support member of the base and from an opening in the tray where the scraper pivotally lodges.

Figure 11 is a partial segmented side perspective view of the base of the toy including the tray in its lodged position but with the scraper pivotally lodged in an opening in the tray and spacedly positioned from a horizontal support member of the base.

Figure 12 is a segmented perspective view of the base of the toy of Figure 6 including the removed tray, but with a bowl member disposed in a recess within the base.

Figure 13 is a top perspective view of the tray having a pair of troughs and an opening where the scraper pivotally lodges.

Figure 14 is a bottom perspective view of the tray having four depending legs and an opening where the scraper pivotally lodges.

Figure 15 is another bottom perspective view of the tray having four depending legs and an opening where the scraper pivotally lodges.

Figure 16 is a perspective view of a cup from which the frozen confectionery may be eaten.

Figure 17 is a front elevational view of a pair of cylinders which in operation contain ice and salt for producing a pair of frozen confectionaries on respective outside surfaces of each cylinder.

Figure 18 is a partial perspective view of the pair of cylinders of Figure 17 separated at their coupling juncture.

Figure 19 is a partial perspective view of the pair of cylinders of Figure 17 separated at their coupling juncture with one of the cylinders partially separated into cylinder parts.

Figure 20 is a segmented perspective view of one of the cylinders separated into cylinder parts.

Figure 21 is another segmented perspective view of one of the cylinders separated into cylinder parts.

Figure 22 is a partial perspective view of the depending horizontal gear of the crank assembly engaged to a perimetrical

gear disposed along a circumferential perimeter of a gear member associated with one of the cylinders.

Figure 23 is a top perspective view of the crank assembly spaced from the cover assembly with the crank assembly disposed for being coupled to the cover assembly.

Figure 24 is bottom perspective view of the crank assembly spaced from the cover assembly with the crank assembly disposed for being coupled to the cover assembly.

Figure 25 is a top perspective view of the crank assembly coupled to the cover assembly.

Figure 26 is a bottom perspective view of the crank assembly coupled to the cover assembly.

Figure 27 is a bottom plan view of the crank assembly.

Figure 28 is a vertical sectional view taken in direction of the arrows and along the plane of line 28-28 in Figure 27.

Figure 29 is a top plan view of the gear-support plate for the crank assembly.

Figure 30 is a vertical view taken in direction of the arrows and along the plane of line 30-30 in Figure 29.

Figure 31 is a partial top plan view of another embodiment of the cover assembly illustrating the transom having an eyelet for pivotally engaging a lug of an embodiment of the scraper.



Figure 32 is a front elevational view of the transom and eyelet of Figure 31.

Figure 33 is a side elevational view of an embodiment of the scraper.

Figure 34 is a top plan view of the scraper of Figure 33.

Figure 35 is a front elevational view of the scraper of Figure 33.

Figure 36 is a partial rear view of the scraper of Figure 33.

Figure 37 is a vertical sectional view taken in direction of the arrows and along the plane of line 37-37 in Figure 35.

Figure 38 is a vertical sectional view taken in direction of the arrows and along the plane of line 38-38 in Figure 35.

## DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

Referring in detail now to the drawings for various embodiments of the present invention and wherein similar parts of the invention are identified by like reference numerals, there is seen a toy, generally illustrated as **10**, for producing a frozen confectionary (e.g., ice cream, yogurt, or the like). The toy **10** includes a base assembly **12**, a bowl member **14** supported by the base assembly **12**, a tray **16** removably secured to the base assembly **12**, a scraper **18** pivotally engaged to the tray **16**, a cylinder assembly **20** rotatably supported by the base assembly **12**, a cover assembly **22** supported by the base assembly **12**, and a crank assembly **24** rotatably supported by the cover assembly **22** and coupled to the cylinder assembly **20** for rotating the same. In another embodiment of the invention the scraper **18** is pivotally supported by the cover assembly **22**.

The base assembly **12** has a floor **30**, a base shoulder **32** bound to the floor **30**, and a base head **34** bound to the base shoulder **32**. The floor **30** has a recess **37** where the bowl is removably postured. The base shoulder **32** has a structure generally defining an arcuate configuration **32a** includes a plurality of openings **39** for slidably receiving dowels (identified as "60" below) of the tray **16**. The base head **34** has a pair of bearing surfaces **38-38** (generally arcuate recesses) recessed in opposed positions for rotatably supporting the cylinder assembly **20**. The base head **34** also has a pair to bearing assemblies **44-44** and a transom **40** for mating and supporting the front of the cover assembly **22**. Each bearing assembly **44** has a bearing groove **48** for receiving a bar (identified as "90" below) of the cover assembly **20**. Each bearing assembly **44** also has spaced ribs **50** for defining

channels **54** wherein splines (identified as "88" below) of the cover assembly **20** removably lodge. In an embodiment of the invention the transom **40** has an eyelet **58** (see Figures 31-32) wherein a scraper lug (identified as "94") pivotally lodges for facilitating the pivoting of the scraper **18** into a position to remove frozen confectionaries off of the cylinder assembly **20** and depositing the same in the bowl **14**. A cup **8** is shown in Figure 16 from which frozen confectionary may be eaten.

The tray **16** has a plurality of depending dowels **60** for slidably passing into the openings **38** of the base shoulder **32** of the base assembly **12** to affix the tray **16** in its operable position. The tray **16** also includes a back **64** and a pair of troughs **62** where a liquid confectionary **63** (see Figure 3) may be poured to come in contact with cylinders (identified as "70" below) of the cylinder assembly **20** and freeze on the surfaces thereof and be scraped off by the scraper **18**. In an embodiment of the invention, the tray **16** may further have a transverse opening **68** (see Figure 13) for pivotally receiving a depending lug (identified as "99" below) for an embodiment of the scraper **18**. Each of the troughs **62** may have a different flavored liquid confectionary to produce frozen confectionaries with different flavors, or a same flavored liquid confectionary to produce frozen confectionary with the same flavor. In this embodiment the tray **16** would pivotally support the scraper **18** such that the user may as desired pivot the scraper **18** against the cylinders of the cylinder assembly **20** to remove frozen confectionary therefrom. The scraper **18** is capable of being pivoted backwards and forward as indicated by arrow **A** in Figure 5.

As best shown in Figures 17-21 the cylinder assembly **20** comprises generally hollow cylinders **70-70**. Each cylinder **70** has

a cylindrical ring **71** with a cylindrical face **72** upon which the liquid confectionary freezes. Each cylinder **70** also has a removable cap **74** for exposing the hollow inside of the cylinder **70** in order that salt and ice may be placed to cool the face **72** of the cylindrical ring **71** and cause liquid confectionary **63** in the troughs **62** of the tray **16** to freeze upon the face **72**. Each removable cap **74** has a protruding cylindrical bearing **76** which in operation is rotatably disposed on one of the oppositely disposed bearing surfaces **38-38**. Each cylinder **70** also includes inner plate **78** (preferably a metallic plate) integrally secured to the cylindrical ring **71** at an end opposite to the end against which the removable cap **74** lodges. A gear plate **80** is coupled to the cylindrical ring **71** over the inner plate **78** which protects the bearing plate **80** from ice and salt. Each gear plate **80** has a perimetrical structure defining a gear **81**. Because both gear plates **80-80** have a gear **81**, and because a driving gear (identified below as "gear 174") only engages one of the gears **81** (not both gears **81-81**), the user does not have to be concerned about any position or location of any of the cylinders **70-70** within the base assembly **12**. If only one of the cylinders **70-70** had a gear **81**, then as a user disposes the cylinder assembly **20** into its operative posture within the base assembly **12**, the user would have to ensure that the cylinder assembly **20** has the proper orientation such that gear **81** of the particular cylinder **70** having the gear **81** would engage the driving gear (identified below as "gear 174").

Concentrically bound to each gear plate **80** is a cylindrical coupler **82**. One of the cylindrical couplers **82** has coupling lugs **82a** as best shown in Figure 19. The other cylindrical coupler **82** has coupling slots **82b** for receiving the coupling lugs **82a** to interconnect the two cylinders **70-70** as best shown in Figure 17. The cylinder assembly **20** including hollow

cylinders **70-70** may be easily disassembled to place ice and salt within the confines of cylindrical rings **71-71** by removing the cap **74**. After ice and salt have been placed within each cylindrical ring **71**, the cap **74** may be coupled back into place such that salt and ice are between each cap **74** and each inner plate **78** of the respective hollow cylinders **70**.

Referring now to Figures 24 - 23, there is seen perspective views of the cover assembly **22** and the crank assembly **24**. The cover assembly **22** has a pair of coupling assemblies **85**, each having splines **88-88** and a bar **90** for engaging the bearing assemblies **44-44** of the base assembly **12** to couple the cover assembly **22** to the base assembly **12**. More specifically, in order to couple the cover assembly **22** to the base assembly **12**, each bar **90** of the coupling assemblies **85** is disposed in one of the bearing grooves **48** (an arcuate groove) followed by pivoting forward the cover assembly **22** causing the spline **88** to pass into the channels **54** defined by the spaced ribs **50** of the bearing assemblies **44-44** of the base assembly **12**.

The cover assembly **22** also has recessed semi-circular grooves **100-100** which mesh with bearing grooves **48-48** of the bearing surfaces **38-38** to provide a circular recess area for rotatably, removably housing the cylindrical bearings **76-76** of the removable caps **74-74** of the cylinders **70-70**. A latch **101** releasably engages the transom **40** of the base head **38** of the base assembly **12**. Openings **104-104** are conveniently provided for allowing a user to view the cylinders **70-70** for determining when frozen confectionary is being formed on the faces **72-72** of the cylindrical rings **71-71**. As best shown in Figure 23, the cover assembly **22** has a crank-support surface **108** where the crank

assembly **24** may be removably supported. The crank support surface **108** has an opening **112**, a plurality of snap-receiving openings **116-116-116**, and a pair of dowel-receiving cylindrical apertures **119-119**.

The crank assembly **24**, has a housing **120**, a lever **124** secured to the housing **120**, and a handle **126** mounted to the lever **124**. The crank assembly **24** also includes a circular gear plate **130** (see Figure 27) having an internal perimeter **132** defining circumferentially disposed gear-teeth **134**. Concentrically positioned with the circular gear-plate **130** and secured to the housing **120** is a shaft **140**. The crank assembly **24** also has a gear-support plate **142** for rotatably supporting a crank gear assembly **150**. The gear-support plate **142** has a conduit **144** concentrically connected thereto for rotatably receiving the shaft **140** connected to the housing **120**. Secured to the bottom of the gear-support plate **142** in a depending relationship are dowels **117** for passing into cylindrical apertures **119**, and snaps **148-148-148** for releasably passing into the snap-receiving openings **116-116-116** of the crank support surface **108** in order to releasably secure the gear-support plate **142** to the crank support surface **108**.

The crank gear assembly **150** has generally cylindrical-shaped gear assemblies **154** and **158**. Gear assembly **154** is rotatably supported by the gear-support plate **142** and includes gears **160** and **164** secured to each other in a superimposed relationship. In operation gear **160** engages the gear teeth **134** of the circular gear plate **130**. Gear **158** assembly is defined by a gear body **170** having gear **172** and gear **174** opposedly connected thereto. Gear body **170** is rotatably connected to and supported by the circular gear plate **130**. In operation gear **172** is

engaged to and driven by gear **164**. Gear **174** extends below the circular gear plate **130** and engages gears **81** of gear plate **80** of one of the cylinders **70**. Broadly, in operation for turning of the cylinder assembly **20**, rotation of the handle **126** causes the circular gear plate **130** to move rotatably in unison therewith. As the gear-plate **130** moves, the associated teeth **134**, which are engaged to the teeth of gear **160**, causes gear **160** to rotate. As indicated, gear **164** is bound to gear **160**. Thus, gear **164** will rotate with and in the same direction as gear **160**. When gear **164** rotates, gear **158** rotates. The teeth of gear **164** is engaged to the teeth of gear **172**, causing gear **172** to rotate as gear **164** rotates. Rotation of gear **172** rotates gear body **170** which in turn rotates gear **174** since gear **174** is affixed to gear body **170**. Because the teeth of gear **174** are engaged to the teeth of gear **81** of gear plate **80** of one of the cylinders **70**, when gear **174** rotates the engaged gear **81** of gear plate **80** rotates, causing the rotation of both cylinders **70-70** of the cylinder assembly **20**, preferably in a direction towards the scraper **18** and in direction of arrow **B** in Figure 2B and 3.

More specific in operation for turning the cylinder assembly **20**, clockwise rotation of the handle **126** causes circular gear-plate **130** to also rotate clockwise, causing gears **172** and **174** to move counterclockwise. As gears **172** and **174** move counter-clockwise, the cylinder assembly **20** including its associated cylinders **70-70** rotate towards the transom **40** of the base head **34** of the base assembly **12** and towards the scraper **18** for removing frozen confectionaries off of the cylindrical faces **72-72** of the cylindrical rings **71-71** of the cylinders **70-70**.

Referring now to Figures 33-37, there is seen an embodiment of the scraper **18** as comprising an arcuate blade structure **200**,

an upright lug-supporting structure **202** bound to the blade structure **200**, and a handle **204** bound to the lug-supporting structure **202**. The blade structure **200** has a blade edge **101**, outside upstanding end walls **210-210** and inside upstanding walls **214-214**. The upright lug supporting structure **202** has a scraper lug **94** positioned within a lug cavern **220**. In this embodiment of the invention the scraper lug **94** pivotally lodges within the eyelet **58** of the transom **40** for allowing the user to pivot the scraper **18** towards the rotating cylinders **70-70** of the cylinder assembly **20**. In another embodiment of the scraper **18** and as illustrated in Figure 3, the scraper **18** comprises a handle **203** and a depending lug **99** pivotally lodging in transverse opening **68** of the tray **16** such that the user may pivot the scraper **18** towards the cylinders **70-70** of the cylinder assembly **20** which are rotating towards the scraper **18** and in direction of arrow **B** in Figure 2B. For the embodiment of the scraper **18** in Figures 33-38, when handle **204** is pulled or pivoted in a direction away from the transom **40** and the cylinders **70-70** of the cylinder assembly **20**, blade edge **101** moves into contact with the faces **72-72** of the cylindrical rings **71-71**. For the embodiment of the scraper **18** in Figures 1A-4, when handle **203** is pushed or pivoted in a direction towards the transom **40** and the cylinders **70-70** of the cylinder assembly **20**, blade edge **101** moves into contact with the faces **72-72** of the cylindrical rings **71-71**.

Continuing to refer to drawings for operation of embodiments of the invention, cover assembly **22** is pivoted upwardly about cooperating bearing assemblies **44-44** of the base assembly **12** and coupling assemblies **85-85** of the cover assembly **22**. This exposes the cylinder assembly **20** which may be removed to expose troughs **62-62** of the tray **16**. A suitable liquid confectionary **63** may be poured into both troughs **62-62**. In an



embodiment of the invention each trough **62** contains a different flavor liquid confectionary **63** so that upon freezing, a user may enjoy two different flavors.

The cold temperature for freezing the liquid confectionary **63** is to originate from ice and freezing salt within the cylinders **70-70**. To load the cylinders **70-70** with ice and freezing salt, caps **74-74** are removed from the cylindrical rings **71-71** to expose inner plates **78-78** and the hollow insides of the cylindrical rings **71-71** of the cylinders **70-70**. After suitable quantities of ice and freezing salt are disposed inside the cylindrical rings **71-71**, caps **74-74** are snapped back into place for encapsulating the ice and freezing salt within respective cylindrical rings **71-71**.

The cylinder assembly **20**, including its associated cylinders **70-70** having ice and freezing salt, is then disposed within the base assembly **12** such that the cylindrical bearings **76-76** protruding from the caps **74-74** are rotatably disposed on bearing surfaces **38-38** of the base head **34** of the base assembly **12**, and such that the lower portions of the cylinders **70-70** are immersed or contained in the liquid confectionary **63** as illustrated in Figure 3. The cover assembly **22** is then pivoted into a closed position, as illustrated in Figures 1A and 1B. In the closed position, as best illustrated in Figure 2C, bearing **174** is engaged with gear **81** of one of the gear plates **80**. When handle **126** is rotated clockwise, gear plate **130** also rotates clockwise. Clockwise rotation of gear plate **130** causes gear **172** and **174** to rotate counterclockwise. As gear **174** rotates counterclockwise, intercoupled cylinders **70** and **70** rotate in direction of arrow **B** in Figure 2B. After about 5 minutes, frozen confectionary begins to form on the faces **72-72** of the

cylindrical rings 71-71. As a skin of frozen confectionary forms, the scrapper 18 may be positioned such that the blade edge 101 contacts the skin of frozen confectionary and scrapes or removes the frozen confectionary into the bade structure 200 of the cylindrical rings 71-71 from where the removed frozen confectionary falls by gravity into the bowl . The procedure is continued until all liquid confectionary 63 has been removed from the troughs 62-62. The dual-blade structure of the scraper 18 allows for simultaneous removal of frozen liquid confectionary from both faces 72-72 of the cylindrical rings 71-71.

The foregoing description of illustrated embodiments of the present invention, including what is described in the Abstract, is not intended to be exhaustive or to limit the invention to the precise forms disclosed herein. While specific embodiments of, and examples for, the invention are described herein for illustrative purposes only, various equivalent modifications are possible within the spirit and scope of the present invention, as those skilled in the relevant art will recognize and appreciate. As indicated, these modifications may be made to the present invention in light of the foregoing description of illustrated embodiments of the present invention and are to be included within the spirit and scope of the present invention.

Thus, while the present invention has been described herein with reference to particular embodiments thereof, a latitude of modification, various changes and substitutions are intended in the foregoing disclosures, and it will be appreciated that in some instances some features of embodiments of the invention will be employed without a corresponding use of other features without departing from the scope and spirit of

the invention as set forth. Therefore, many modifications may be made to adapt a particular situation or material to the essential scope and spirit of the present invention. It is intended that the invention not be limited to the particular terms used in following claims and/or to the particular embodiment disclosed as the best mode contemplated for carrying out this invention, but that the invention will include any and all embodiments and equivalents falling within the scope of the appended claims.